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1. (Amended) A composition comprising a substantially purified thermostable AviIII peptide, said AviIII peptide comprising a catalytic domain of a glycosyl hydrolase family 74 enzyme and a carbohydrate binding domain (CBD) III.

2. The composition of claim 1 wherein the thermostable AviIII peptide is further defined as comprising a linker and a signal sequence.

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3. (Amended) The composition of claim 1 or 2 wherein the glycosyl hydrolase family 74 enzyme catalytic domain of the thermostable AviIII peptide is further defined as having a length of about 730 to about 760 amino acids.

4. (Amended) The composition of claim 1, 2, or 3 wherein the carbohydrate binding domain (CBD) III of the thermostable AviIII peptide is further defined as comprising a length of about 80 to about 150 amino acids.

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5. (Amended) The composition of claim 1, 2, or 3 wherein the carbohydrate binding domain (CBD) III of the thermostable AviIII peptide is further defined as comprising a length of about 90 amino acids.

6. (Amended) The composition of claim 3 wherein the glycosyl hydrolase family 74 enzyme catalytic domain is further defined as a polypeptide sequence of SEQ ID NO: 3.

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7. (Amended) The composition of claim 3 wherein the carbohydrate binding domain (CBD) III is further defined as a polypeptide sequence of SEQ ID NO: 4.

8. (Amended) The composition of claim 3 wherein the carbohydrate-binding domain (CBD) III is further defined as comprising the polypeptide sequence of SEQ ID NO: 5.

9. (Amended) The composition of claim 1 wherein said AviIII protein comprises the polypeptides represented by SEQ ID NO: 3 and SEQ ID NO: 4.

10. (Amended) The composition of claim 1 wherein said AviIII protein is encoded by a nucleic acid sequence having at least about 70% sequence identity to the polynucleotide sequence of SEQ ID NO: 2.

11. (Amended) The composition of claim 1 wherein said AviIII protein is encoded by a nucleic acid sequence having at least about 80% sequence identity to the polynucleotide sequence of SEQ ID NO: 2. *C5*

12. (Amended) An isolated thermostable AviIII peptide having a polypeptide sequence of SEQ ID NO: 1.

13. (Amended) The isolated thermostable AviIII peptide of claim 12 encoded by the polynucleotide sequence of SEQ ID NO: 2.

14. An industrial mixture suitable for degrading cellulose, such mixture comprising the thermostable AviIII polypeptide of claim 1. *C6*

15. The industrial mixture of claim 14 further defined as comprising a detergent. *C6*

28. (Amended) An isolated polypeptide molecule comprising:

- a) a polypeptide sequence of SEQ ID NO: 3;
- b) a polypeptide sequence of SEQ ID NO: 4;
- c) a polypeptide sequence of SEQ ID NO: 5;
- d) a polypeptide sequence of SEQ ID NO: 1;
- e) a polypeptide sequence of SEQ ID NO: 3; SEQ ID NO:4; and SEQ ID NO: 5;

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or

f) a sequence having at least about 70% sequence identity with the polypeptide sequence of a), b), c), d), or e).

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29. (Amended) The polypeptide molecule of claim 28, having at least about 90% sequence identity with the polypeptide sequence of a), b), c), d), e), or f).

30. A fusion protein comprising the polypeptide of claim 28 and a heterologous peptide.

31. The fusion protein of claim 30, wherein the heterologous peptide is a substrate targeting moiety.

32. The fusion protein of claim 30, wherein the heterologous peptide is a peptide tag.

33. (Amended) The fusion protein of claim 32, wherein the peptide tag is 6-His, thioredoxin, hemagglutinin, glutathione S-transferase, or OmpA signal sequence tag.

34. The fusion protein of claim 30, wherein the heterologous peptide is an agent that promotes polypeptide oligomerization.

35. The fusion protein of claim 34, wherein the agent is a leucine zipper.

36. A cellulase-substrate complex comprising the isolated polypeptide molecule of claim 28 bound to cellulose.